THE VETERINARY RECORD

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Edited by WILLIAM HUNTING, F.R.C.V.S.

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"COMPARISONS, ETC."

Probably even earlier than that memorable occasion when the Pharisee compared himself with the Publican men felt the force of the idea expressed in the proverb—comparisons are odious. Last week we reprinted a letter from *The Lancet* contributed by a Mr. Gordon, of Exeter. Mr. Gordon seems to think his profession (medicine) is going to the dogs because its members are devoting more time to science than to classics. He discloses his views of science by describing physiology as "cutting up frog" and chemistry as "making smells in a laboratory." We are not much concerned either with his complaints against the education of his profession or his simple notions about science. They are not incompatable with a long residence in a provincial Cathedral town, and may be passed by with a contemptuous smile. What we do object to is the sentence—"a profession whose standard of general education at entry is no better than that of a pharmaceutical chemist or veterinary surgeon need feel no surprise or displeasure at being classed with its literary equals." As we belong to the "publicans" we don't think it is quite civil for this "pharisee" to refer to us as "even this publican." Mr. Gordon may be a very respectable man but his training in "the humanities" has not taught him modesty. Probably he is too far gone to derive any advantage from study, but we recommend him a course of one of Thackeray's works—say *The Book of Snobs*.

STABLE MANAGEMENT.

Among the subjects upon which veterinary students are submitted to examination is "Stable Management." It is not a very profound study, but the knowledge required is very necessary—in fact indispensable to a man who hopes to successfully practice among horses.

The graduate who is ignorant of how to approach an animal is looked upon by the owners or attendants with amazement, and his other knowledge is suspected of being as defective as that displayed.

There was a time—before the inclusion of Stable Management in the examinations—when graduates had been seen to pick up a horse's foot without a word and by immediately grasping the fetlock. There is a tradition of a newly graduated man mounting a horse from the off side, and of another who examined a cow's udder from the near side. As to the use or application of halters, various bridles, or martingales, the graduate had not an idea. So dreadful was this ignorance that the Council, some years ago, with the assent of teachers and examiners, established an examination which should prevent the possibility of further exhibitions of primitive ignorance.

Recently we have heard murmurs against this test. Of course extreme cases have been used for illustration. We are told of men who obtained the very highest marks in Physiology and Anatomy being "stopped" in Stable Management. The mere statement of such a fact seemed to impress the person complaining that he had an unanswerable case. "Just think of it, a man who got 80 per cent. in Physiology and Anatomy being cast in Stable Management!" We have thought of it, and our only conclusion is—serve him right! We believe that the man who knows the habits and peculiarities of healthy animals, how to manage them and how to avoid trouble is likely to make a better practitioner than the man who knows where the *ita a tertio ad quartum ventriculum* is.

We have no desire to exaggerate the importance of "Stable Management" but we do insist upon its being recognised as necessary. If the teachers really believe that it stops a good student and wastes a year of his time when rejection occurs, we should not object to a man being allowed to pass in the other subjects and being examined in "Stable Management" at next examination.

Among the curious arguments which have been adduced against the subject the very weakest is an analogy supposed to exist in human medicine examinations. We require a mild knowledge of harness, clothing and shoeing. The critics say what would medical authorities think if it were suggested that an examination for doctor should include a knowledge of tailoring and shoemaking? Clearly the supposed analogy is misleading. We all, as human beings, know whether clothes or boots fit us. We have our subjective faculties. Without experience and study we know nothing of the harness and shoes of horses except what is learned by objective observation or tuition. Unless we are taught we may look calmly on at serious mischief resulting from shoe or harness and be blissfully ignorant of its existence or causation.

TEACHERS AND EXAMINERS.

A recent suggestion is that teachers should be admitted to the Examining Board, and it is supported by the argument that a teacher best knows the ability and knowledge of the man he has taught. The way to utilise the teacher is to associate him with an external examiner, so that the two together would arrive at the most perfect estimate of the candidate's value. With the highest type of teacher and examiner this arrangement might possibly be the best, but it seems to be a straining after perfection that is unnecessary, and it overlooks some practical difficulties.

To ask a teacher to examine his own students is very similar to asking a man to judge his own

horses or cattle at a show. No one would do such a thing, and no one would be allowed to. Of course it may be said that examination of students is not competitive. It is not, but as there are five rival schools, each keen to have a good pass list, a sort of competition does exist, and we now avoid the possibility of accusations which might arise if teachers examined their own students.

Until some stronger reasons have been offered in favour of a change it hardly seems worth while to interfere with a practice that works well.

"Careful observation makes a skilful practitioner but his skill dies with him. By recording his observations he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of Pathological Science."

A CASE OF STRYCHNINE POISONING.

I was called one day to a fox-terrier of ordinary size, and about six or seven years old. The history given was that about a couple of hours before the dog had suddenly been seized with a "sort of fit," which had lasted for a minute or two, and then passed off, to be succeeded within three or four minutes by another precisely similar attack. Since then the animal had seemed perfectly well, and appeared so in every respect when I examined him.

On enquiring more closely into the nature of these "fits," I found that they had evidently been clonic spasms of the muscles of the body and limbs, and were certainly suggestive of the action of strychnine. The owners, in addition, wound up their account of the symptoms by saying that they had that day given the dog two laxative pills intended for human use, their supply of which they showed me. Fortunately the prescription was printed on the label, and I thus learned that each pill contained strychnina, gr. 1/60. The animal had therefore received gr. 1/30 of the alkaloid.

I administered chloral hydrate, and continued doing so for the rest of the day, but the symptoms did not recur, and I do not think they would have done, had no medicine been given.

The pills, which were coated, had been given some three or four hours before the appearance of the symptoms. No uneasiness, twitching, etc., had been noticed by the owners before the onset of the spasms, and they described little, if any, prostration between or after the two "fits," which I am satisfied, however, were due to the strychnine.

Smaller doses than 1/30 gr. of this drug have often, I believe, been known to cause toxic symptoms in dogs, and probably many men of experience in canine practice have met with cases very similar to this. But it can scarcely be too strongly impressed upon the student and young practitioner that strychnine and nux vomica, which so often figure in human laxative formulæ, generally do so in doses not safe for the dog.

M.R.C.V.S.

MALIGNANT ŒDEMA IN THE DOG.

By G. H. Livesey, Hove.

The patient, a mongrel terrier bulldog, was owned by a doctor. When first seen the left side of the face was enormously swollen and serum was exuding from the skin. The swelling had been increasing in size for three days and was supposed to be the result of a fright or of a blow from a stick or stone. Treatment had been confined to hot water fomentations. The rectal temperature was 106, there were occasional rigors, and the appearance of the dog suggested drowsiness or semi-consciousness. At no place could the swelling be found to be pointing, and the enlargement being so great it was almost impossible to open the jaws sufficiently to examine the mouth. Treatment adopted was free incision in five or six places over the swelling and washing with cold chinosol solution and the internal administration of quinine.

The next day the swelling was a little reduced, and the mouth was examined. The tongue was chocolate brown in colour, ulcers were found inside the lips and buccal pouch on the left side and were probably the result of pressure necrosis. On the outer skin of the face two sloughing patches, each about the size of a halfpenny, were noticeable and were removed without apparent pain. Fresh incisions were made and a quantity of sero-pus withdrawn, the submaxillary glands explored, and pus evacuated. The wounds and all pus sinuses were thoroughly washed and irrigated about four times in twelve hours with 5 per cent. peroxide of hydrogen. On the third day a further abscess was opened inside the buccal pouch and the contents evacuated by the mouth (the dog being prevented from swallowing). Similar treatment was followed as previously adopted. The swelling was now much reduced and the temperature only a little raised, also the dog ate a little meat and a little fried fish —the first food of any kind for three days. The improvement continued during the fourth day, but at night all desire for food was replaced by an intense thirst. Treatment was strictly carried out as before.

On the fifth day the whole neck was swollen and the temperature subnormal. The submaxillary and superior cervical glands were again opened and irrigated with peroxide until all effervescence had ceased. Ten c.c. of antistreptococcus serum were injected in the groin, as the infection was then believed to be streptococcic. The dog was dazed, weak, and hardly able to crawl about, he lay nearly all day wrapped up in the sun and open air. A second serum injection was given in the evening, when it was noticed that there was a subcutaneous emphysema about the lower regions of the neck and shoulders. This was even more extensive on the morning of the sixth day, when the dog was seen to be evidently dying. Temperature was 98·6, pulse small and wiry at 160, breathing rather laboured, extremities cold. Coma was almost established. Brandy was added to each spoonful of

meat juice, and artificial heat applied to the legs and body.

At mid-day the temperature was just above 97·5, but the pulse continued as in the morning. About 5 o'clock temperature was 95·4 only, the pulse had drcpped to 112, but the dog roused from the coma and after a few minutes restlessness vomited. Half an hour later the pulse was about 90 and weak; another effort was made to vomit during which the dog died. I made no post-mortem.

The emphysema had greatly increased before death, and such blood as I saw was very dark in colour and formed no clots. I was unable to detect any rigor mortis at any time, but putrefaction was well advanced twelve hours after death.

TENDERING FOR CONTRACTS.

Most practitioners will agree that it would be to their advantage if contracts for shoeing and for professional attendance were separate and distinct, and if the custom of asking for tenders was abolished. It seems peculiar, however, to assume that while it is professional to tender for shoeing it is unprofessional to tender for attendance and medicines.

Now to my mind, if we tender for shoeing only we are simply putting in the thin edge of the wedge for the professional attendance, and are competing with our *confrères*. It is rather unusual, at any rate in this district, for one veterinary surgeon to have the shoeing of a stud of horses, and for another to attend professionally. The arrangement would not be a satisfactory one for any of the parties concerned, and the drawbacks are obvious. From the professional point of view, what position would the veterinary surgeon who has the contract for shoeing only, have in the eyes of the horse-owner?

Simply that of a blacksmith, who must be guided and ordered by the attending veterinary surgeon.

We cannot blame the public for asking our terms for shoeing, attendance and medicines; the contract system suits them best, and naturally they desire to pay as little as they can. Let the veterinary surgeons agree among themselves as to the *lowest* terms they will accept, and then the tenders will not produce the pernicious effect as at present.

I should consider that a *confrère* who cut down the price of shoeing in order to obtain a contract quite as harmful as one who cut down fees; the effect is exactly the same, as if a client takes his shoeing away it is morally certain that the treatment will follow suit.

It has often been suggested that the shoeing forge in connection with veterinary practice should be abolished. We are often asked why we keep such a troublesome appendage. It certainly is not from the profits derived from the shoeing *per se*.

The chief reasons are:—

(1) The assistance which skilled farriers are able to give in the shoeing of diseased and defective feet.

(2) Skilled assistance in casting horses for operations.

(3) To please clients, the large majority of whom imagine that horses can only be properly shod at a veterinary establishment, and that it is of advantage to have a mark for damages in case of injuries from shoeing.

(4) To act as a valuable adjunct to practice; the majority of horses that are shod in the veterinary establishment being treated there also. This is the chief reason.

The drawbacks of keeping a forge are so well-known that they need not be mentioned.

If all the veterinary surgeons in a town agreed to abolish the forge it would be to their advantage. But a newcomer steps in and starts the game again and the result is obvious. It will take many years before the public will learn to disassociate shoeing from treatment, and those of us who are so unfortunate as to keep forges and to earn our living from the unhappy combination of shoeing and practice, cannot afford to educate clients on the subject. If we were independent it would be a different matter.

But let us be consistent on one point, viz., that competition by sending tenders for shoeing is indirectly as damaging as tendering for attendance.

Let us admit candidly that it is the treatment and attendance we desire far more than the shoeing.

When the custom of appointing veterinary surgeons by the splitting of shillings and sixpences becomes a thing of the past, and tenders are no longer in vogue, it is reasonable to enquire how large firms will decide the question.

Is it on professional skill and ability? Not likely; the elements of canvassing, friends, politics, religion, etc. will all enter into it, as they do in the elections of many salaried positions at present.

E. WALLIS HOARE.

WESTERN COUNTIES VETERINARY MEDICAL ASSOCIATION

The 54th general meeting was held at the "Duke of Cornwall" Hotel, Plymouth, on Thursday, Nov. 22. In the unavoidable absence of the President (Mr. E. J. Thorburn) Mr. Olver, of Truro, was voted to the chair; other members present included Messrs. Wm. Ascott, Bideford; W. H. Bloye, P.G. Bond, and J. C. Collings, Plymouth; J. Dunstan, Liskeard; G. H. Gibbings, Tavistock; Wm. Penhale, Barnstaple; and Wm. Penhale, Holsworthy.

The minutes of the last meeting were read and confirmed.

Apologies for non-attendance were read from the President, Sir John M'Fadyean, Prof. Penberthy, Messrs. G. H. Elder, W. G. Gillam, A. H. Oliver. R. E. L. Penhale, W. Roach, A. G. Saunders, and R. Youngs.

CORRESPONDENCE.

Contagious Diseases (Animals) Acts.—The HON. SEC. read the following letter received from the Clerk to the Devon County County:—

"I have to inform you that the Executive Committee have carefully considered the representations of your Association with regard to the present scale of allow-

ances to veterinary surgeons who may be called in under these Acts, and that they have arrived at the conclusion that they would not be justified in recommending the County Council to vary the scale."

It was resolved "That the Committee be asked to continue their services, to communicate with all the veterinary surgeons in the county with a view to united action, and to take such other steps in the matter as may be deemed expedient."

Parliamentary Representation.—A letter from Mr. E. Lionel Stroud, and a eopy of the resolutions passed at a recent meeting of the Committee of Ways and Means was read, and it was resolved "That before committing this Association to any definite promise of support, the Hon. Secretary be asked to obtain further details of the movement."

Votes of Sympathy.—Reference having been made to the unfortunate accident which recently occurred to Sir John M'Fadyean, the Hon. Sec. was asked to convey the following resolution, moved by Mr. Bloye, seconded by Mr. Bond: "That this meeting of the Western Counties Veterinary Medical Association has heard with the deepest regret of the unfortunate accident which has occurred to Sir John M'Fadyean, and offers him its sincere sympathy."

A letter from Mr. G. H. Elder, of Taunton, was read, stating that a long continued illness prevented him from attending the meeting that day: it was unanimously resolved: "That this meeting receives Mr. Elder's letter with extreme regret, and hopes that a rest and his contemplated change of air will have a beneficial result."

The CHAIRMAN very feelingly referred to the loss the Association had sustained by the death of Mr. C. Parsons, of Launceston, who was one of our oldest and most respected members. The Hon. Secretary was desired to convey to the deceased's family the deepest sympathy of the members of this Association.

SPECIMENS.

Mr. COLLINGS exhibited a renal calculus weighing 17 ounces which he had removed from the left kidney of a twelve-year-old cart mare, and he said that at the same time he also removed a smaller one.

Mr. DUNSTAN exhibited a portion of a steer's penis showing a calculus *in situ*. Also a horse's head showing seven molar teeth on each side, above and below, and various photographs, including swine fever ulcers, foot-and-mouth disease, scab in sheep, and canker in a cat's ear.

MAJOR BUTLER'S RESOLUTION *re* AN ANNUAL REGISTRATION FEE.

Mr. DUNSTAN said he should support the resolution, being of opinion that the acquirement by the Royal College if this money would ultimately benefit the members of the profession generally.

Mr. GIBBINGS said he should move a direct negative, as far as he could see the present Council was doing very little for the profession, and would probably waste the money if they got it in doles to universities and increased fees to examiners, who were already sufficiently well paid, considering the appointment as examiner was one of the highest, if not the highest, honour that could be conferred on a member of the profession; the position was much coveted, not for the pay but for the honour.

Mr. COLLINGS said he quite agreed with Mr. Gibbings. If the resolution became law he should like to know what was going to be done with the money. He supposed our present "modest little home, modest little library, and modest little museum" was not grand enough for the London Veterinary Medical Societies, and no doubt they were anxious to spend the money in extending these; in his opinion they were quite good enough for the provincial members.

Mr. BLOYE said he was sorry to hear Mr. Collings had such a bad opinion of the Central Veterinary Medical Society and of Major Butler, who was a man quite above suspicion and who had given much time and thought to the subject. Without going into the question of Examiners' fees (for obvious reasons) there could be no doubt the money would find many useful outlets. The Council at present subsisted entirely on the fees extracted from the students. No legislation could make the proposed fee retrospective, it would therefore only apply to new graduates and if paid by present members would be purely voluntary on their part. It may be somewhat difficult to collect, but subject to its being found feasible he most decidedly thought we ought to support the resolution, and had great pleasure in moving that we do so.

Mr. PENHALE (Barnstaple) in seconding Mr. Bloye, said we have done nothing for the College since we received the benefit of being admitted as members. The present College premises were built by the money received from the registration of the unqualified practitioners; he thought it was now time to do something to help the poor student, and if such a substantial sum as £2000 or £3000 could be placed in the hands of the Council, it would be of great advantage, and give us a far better standing amongst other professions. The old saying "wealth is power" was a very true one. With regard to Mr. Gibbings' complaint that the College did little for the profession, how could they if they had no money to fight with? He did not consider there would be any difficulty in collection.

Mr. BOND spoke in favour of the resolution. He thought it was a very small matter that we should be asked to support ourselves. True charity begins at home, and as the majority of the members could find guineas for Horse Shows etc. he had no doubt that the most of us would not feel the loss of a guinea for this purpose; he considered the money would be well spent.

Mr. PENHALE (Holsworthy) said he was not utterly opposed to the resolution, but not so strong in support of it as some of the previous speakers. No doubt very much good could be done with the money, but he was afraid it would be found that many country practitioners could ill afford to spare a guinea a year. Half-a-guinea would be sufficient. It was well to bear in mind that the future of the profession did not look too bright, and the number of students showed a considerable decrease.

Mr. OLVER said he lived in a very benighted part of the world where he very seldom had the opportunity of meeting another veterinary surgeon, but whenever he did so he generally found that guineas were said to be very scarce. He thought, however, that this difficulty was much over-rated and surely most of us could afford it. A guinea would be well spent in this way, and the profession eventually benefit by it. A society or profession can do many desirable things with money, which would otherwise have to remain undone.

Mr. ASCOTT supported the resolution, being quite sure there were many excellent ways of spending the money as already indicated. Scholarships, for instance, might be founded.

The resolution was carried with two dissentients.

PUBLIC ABATTOIRS.

In introducing this question Mr. Bloye said as it was one of very great importance both to veterinary surgeons and the public generally, and was at the present time occupying considerable attention by our governing bodies, he wished to move the following resolution:

"That this meeting of the Western Counties' Veterinary Medical Association desires to emphatically en-

dorse the principle of public abattoirs for the slaughter of meat producing animals, and in connection therewith would urge upon all constituted authorities the necessity of properly qualified inspection of all meat intended for human food, and when practicable, of all animals so intended immediately prior to slaughter, and that copies of this resolution be sent to the various authorities in Devon, Cornwall. and Somerset."

Mr. PENHALE, of Holsworthy, said it gave him much pleasure to be able to second such a resolution. He was confident that the only way to detect and prevent the sale of the vast amount of unsound meat which at present found its way into our large markets would be by properly qualified inspection.

The resolution was unanimously carried.

The annual meeting will be held at Exeter in March next.

WM. ASCOTT, *Hon. Sec.*

THE CIVIL VETERINARY DEPARTMENT IN INDIA FOR THE OFFICIAL YEAR 1905-1906.

The districts over which the operations of the Department extend are the same as last year. Some slight rearrangement of the charges of officers has been rendered necessary by the creation of the new Province of Eastern Bengal and Assam.

Colonel J. W. A. Morgan has been in charge of the office of Inspector-General during the whole of the year except for one month and nineteen days, when Major H. T. Pease officiated for him.

Considerable progress has been made in the development of the supervising staff of the Department, no less than seven new appointments having been sanctioned during the year. The posts they are intended to occupy are :—(i) Second Assistant Bacteriologist at Muktesar, (ii) Superintendent for Eastern Bengal and Assam, (iii) Third Superintendent, Burma, (iv) Third Superintendent, Punjab and North-West Frontier Province, (v) two additional furlough reserve posts, and (vi) one training reserve post.

Four new officers arrived in India during the year and were posted as follows :—one as 2nd Superintendent, Punjab and North-West Frontier Province, to replace Mr. Oliver posted as 2nd Superintendent, United Provinces ; one as Assistant Bacteriologist, relieving Mr. Montgomery appointed to investigate the diseases of the camel ; one attached for training to the Superintendent, Bombay ; and one for training under the Superintendent, Bengal.

The strength of the cadre was thus brought up to 26 during the year, or with the sanctioned appointments still unfilled to 32. This, although a very substantial increase, is still much below requirements, the charges of Provincial Superintendents being far too extensive for practical purposes.

During the year the following officers were either absent on or returned from leave :—Lieut.-Colonel Brodie Mills, Lieut.-Colonel Raymond, Major Joslen. and Captain Dawson. Captain J. D. E. Holmes remained on deputation in Europe.

Mr. R. E. Montgomery took up his appointment of Veterinary Officer investigating camel diseases, with head-quarters at Lahore, and has been provided with suitable office establishment and funds. He is at present accommodated at the Punjab Veterinary College and is working under the orders of the Inspector-General.

INSPECTOR-GENERAL'S TOUR.

With regard to the tours of inspection of the Inspector-General, Colonel Morgan attended the Rawalpindi Horse Show and Amritsar and Lyallpur Cattle Fairs ; inspected the Muktesar Bacteriological Laboratory and branch Depôt at Bareilly ; visited Calcutta to conduct an examination of Civil Veterinary Department officers for promotion, attended the Board of Scientific Advice. Was present at the Agricultural Conference at Pusa and visited Sargodha to inspect the site for the Cattle Farm. Attended the purchasing Committees for Arab and Australian stallions ; visited the Chharodi Cattle Farm, and inspected the Government Cattle Farm at Hissar. The distances travelled during the year were 21,336 miles by rail and 68 miles by road.

Major Pease, during the time he officiated, visited the Imperial Bacteriological Laboratory at Muktesar.

VETERINARY COLLEGES AND SCHOOLS.

Four Colleges, those of the Punjab, Bengal, Bombay and Madras, are training up to the graduate course. The course of instruction in Bengal, Bombay, and Madras is carried out in English, whilst in the Punjab College the teaching is up to the same standard in the Urdu language. There is also a School in Rangoon, with a two years' course in Burmese, in which the Veterinary Assistants required for that province are trained.

All our two years' courses for civilians, with the exception of Rangoon, have now been discontinued, but the Military Department instituted a two years' course for the training of Salutris for their Cavalry regiments at the Punjab College. This has, however, proved to be unworkable, and the question of abandoning it and giving the men a three years' training is now under consideration.

The results of the work in these institutions have on the whole been very satisfactory ; 75 men passed the final graduates examination of the three years' course, *i.e.*, 51 from the Punjab College, 10 from Bengal, and 14 from Bombay ; 25 passed out of the two years' course.

There were 512 students remaining under instruction at the end of the year and 296 new students were admitted during the year as against 331 remaining under tuition and 262 new students admitted last year.

The demand for Veterinary Assistants is now very great indeed, not only to fill the ranks of the Subordinate Veterinary Department, but also from the Army and other sources, and every endeavour is being made to accommodate and turn out as many graduates as possible. The number of students has been increased by 100 in the Punjab College which is now arranging for permanent classes aggregating 250, and in Bengal 50 more men are under training.

From the above remarks it will be seen that extraordinary progress has been made in the development of veterinary education in all Provinces during the year. This is a matter for congratulation, as the better trained our Veterinary Assistants are the more satisfactory will be the results of their employment in the districts.

CONTAGIOUS DISEASE AMONGST SOLIPEDS, OUTBREAKS, MORTALITY, ETC.

The returns are as reliable as it is possible for us to make them at present, but represent only cases which have been brought to the notice of officers of the Department. As the supervising and executive staff is at present very small indeed and much below requirements in all provinces and the equine population very sparse in the rural districts, it is obvious that the numbers given do not in any way represent the total mortality from the diseases mentioned. I think, however, that some improvement has been effected in the system of reporting outbreaks in provinces where the Department has made some headway. In other places, where, owing to the inadequacy of the staff, no assistance can be given, reports are naturally not often sent in.

Glanders.—There is a slight increase in the number of cases of Glanders dealt with under the Glanders and Farcy Act during the year. An important step was taken by the Government of Bengal which framed special rules for applying the Glanders and Farcy Act of 1899 to Calcutta and its suburbs, and the staff and isolation arrangements will be provided in due course. The Act was also applied to Ajmer, Beawar and Nasirabad Cantonments. 580 cases were detected and destroyed against 508 last year. No less than 530 of these occurred in Bengal proper and 21 in Eastern Bengal and Assam; the number of cases in other provinces being insignificant. The wisdom of enforcing the Act in Bengal is therefore proved beyond doubt. Bombay return only 17 cases this year against 50 last, so that the number there is normal.

In connection with the subject of Glanders, it is interesting to note that a form of Pseudo Glanders has been detected both at the Imperial Bacteriological Laboratory at Muktesar and in the Punjab Veterinary College Laboratory, the material having been obtained in the first case from Bombay and in the last from the Punjab. The true nature of the virus causing this disease is not yet decided, but Dr. Lingard considers that the organism is probably an attenuated form of the *Bacillus mallei.*

Anthrax and Surra.—The returns of other equine contagious diseases are not of much value as they only relate to cases which have been seen. Thirty-two deaths from Anthrax in equines, 117 cases of Surra of which 104 occurred in the Punjab, and 2 of Dourine are reported from the whole of India; and 1,060 deaths from contagious di-ease other than those named. It is reported that there have been severe outbreaks of Surra in the Punjab during the year in Ferozepore and Lahore districts. The desirability of destroying equines affected with Surra, which never recover and prove a source of danger during the season when biting flies are prevalent, has been recognised and provided for by scheduling the disease under the Glanders and Farcy Act in places where it is possible to confirm the diagnosis by a microscopical examination of the blood.

Epizootic Lymphangitis appears still to be more or less confined to the Army, only one case being reported from Bombay. With the object of preventing spread in our districts, it has been scheduled with Surra under the Glanders and Farcy Act of 1899.

Dourine does not appear to be very widely spread, as only two cases are reported from the non-selected districts. There can be no doubt whatever that the stringent measures taken to stamp this disease out in the selected districts have been attended with great success.

Other contagious diseases.—Of the diseases not named I am glad to be able to report that White Scour has been successfully dealt with in one at least of the studs in which it had been reported last year. No information has been received regarding the other, so it is presumed that it is free. The advice given by this Department has resulted in complete cessation of the disease. Strangles is perhaps the next most troublesome and fatal disease of equines in India, the irregular form in which mesenteric abscess occurs being very common indeed. Tetanus is also troublesome in some areas and at certain seasons of the year. Horse pox is a very common and contagious disease, but is seldom fatal.

Contagious Diseases in Bovines.

Altogether 242,782 cattle are reported to have died from contagious disease during the year in the whole of India. The returns are not only unreliable, but quite misleading. If this required any proof, it is forthcoming in the fact that statistics collected in the limited area of the Surma Valley by the Tea Association Committee show that the mortality from Rinderpest alone in the Valley during last year, amongst cattle and buffaloes, exceeded 200,000. This is interesting when read with the report of the Bengal Superintendent, which shows that only 12,394 deaths from contagious disease were reported to his office from the whole of the province during the year. The fact, too, that 2,645,675 hides were exported from Madras alone during the year also gives some idea of the possible mortality from disease in the country. The executive and supervising staff is so infinitesmal in many provinces that we are scarcely able to touch the fringe of the work, and the agency employed for the collection of statistics, although the best that can at present be devised, is extremely unsatisfactory.

Rinderpest accounted for 137,233, or more than half the total number of deaths from contagious diseases reported, against 92,090 head last year. The greatest mortality occurred in Burma where 91,380 head are reported to have perished despite the efforts made by the Department to deal with it. Segregation and inoculation were adopted whenever possible, but the Burman has not yet realized the advantages of the serum and is apparently too apathetic to bother about having his animals treated. The difficulties experienced in travelling about the country, in certain seasons, are very great and prevent assistance arriving in time to be of much use.

The disease was particularly prevalent and severe in the Southern Shan States. The cattle being hill animals are extremely susceptible and the disease, introduced from the West, spread eastwards at a terrific pace, appearing to go right through the country and come back on its course, attacking those villages which it had missed on its first onslaught. Segregation proved futile and the animals died faster than they could be devoured by dogs and vultures or buried by the people. 67,697 animals are reported to have perished.

Anthrax.—For the reasons above stated, I am afraid that even less reliance can be placed on the reports received regarding this serious disease. The time is far distant when we shall be able to gain even an approximate idea regarding the prevalence and distribution of anthrax in India The symptoms shown during life are obscure and in most cases not diagnostic Animals die very quickly and unless a microscopical and bacteriological examination can be made by a properly qualified person, the cause of death cannot with certainty be attributed to Anthrax. That the disease does exist in India to a great extent there can be no doubt whatever, as it has in numerous instances been diagnosed by professional men.

Foot-and-Mouth Disease.—The deaths reported from this disease number 19,060 against 17,029 last year. It was most severe in Burma, as was the case last year, 12,308 of the deaths occurring in that province. The disease is generally very widespread over most provinces but the percentage of deaths is comparatively small. In Burma, it was most severe in Bassein, Henzada, Pegu, and Myingyan; but deaths occurred in every district. In Bengal, it occurred in 17 districts and was most severe in Puri where 763 deaths occurred. It was reported from 18 districts of the United Provinces and 867 deaths occurred.

As before stated, the disease is usually very mild in type and the feet generally affected, so that few deaths occur excepting in sucking calves, in which it is rather fatal. Deaths often occur from complications, especially myiasis, in which many animals can be saved by veterinary assistants.

Black Quarter, Black Leg, Charbon Symptomatique.—This serious widespread disease of young cattle is very prevalent in many parts of India, but the time has not yet arrived when the localities in which it is en-

zootic can be accurately determined. I am afraid that we cannot gather much information on the subject from the returns submitted this year. They show that only 6,723 cases were reported from the whole of India. I can only say that if one district exists where the disease is endemicp, robably more animals perished in it during the year than are shown for the whole of India.

(*To be continued.*)

OPSONINS AND BACTERIAL VACCINES.

By G. W. Ross, M.A., M.B. Toronto, M,R.C.P. Lond., Toronto. [Abstract from paper in the Section of Therapeutics, British Medical Association: Toronto, August, 1906.]

I need hardly tell you that that in the short space of time at my disposal I shall be quite unable to discuss in any detail this already considerable subject. I propose to refer briefly to the bare principles of the opsonic theory, and then to consider the principles and practice of therapeutic inoculation with illustrative cases.

Let me first of all recall to your minds certain important characters of the antibacterial substances in the blood known as opsonins.

1. Opsonins act by chemically uniting with the invading bacteria and so altering them that the leucocytes are able to phagocyte the bacteria and destroy them. It is important to remember that these substances do not stimulate or otherwise affect the leucocytes.

2. It is probable that there are many varieties of opsonins present in the blood plasma, each having to do with combating a particular kind of microbic invasion.

3. Opsonins have been shown to be distinct from other bacteriotropic substances, such as the bacteriolysins, the agglutinins, and the antitoxins.

The *rôle* of the leucocyte now calls for attention. Wright and Douglas and Bulloch have shown that the leucocytes of people in good or in ill health have the same ability for phagocytosis, provided only that the bacteria have been acted upon by the same blood serum. If that be so, then the amount of phagocytosis of bacteria determined in any given preparation is an indication, not of leucocytic activity, but of the richness of the plasma in those substances which are essential for phagocytosis—namely, the opsonins.

The opsonic content of any blood, therefore, is arrived at by comparing the amount of phagocytosis observed as a result of the activity of its serum with the amount of phagocytosis observed in the case of a normal serum used as control. The figure so obtained is termed the "opsonic index" of the patient's blood.

If, therefore, we say that a patient's blood has an opsonic index of 0·5 to the tubercle bacillus, what do we mean? Simply that it contains but one-half the normal quanity of those opsonins which are essential to a combating of the *Bacillus tuberculosis.*

These, gentlemen, are the bare principles of the opsonic theory.

Therapeutic Inoculation.

Let us now pass on to consider the treatment of bacterial infections.

This has been, and must continue to be, either the surgical removal of a bacterial focus (such as is done with a small patch of lupus vulgaris) or the determination of an adequate antibacterial substance to the focus (such as is possibly done by the application of carbolic acid to a furuncle, or by therapeutic inoculation of an appropriate bacterial vaccine).

It is important to consider anti-bacterial or bacteriotropic substances for a moment. They may conveniently be divided into:

A. *Chemical antiseptics* extracorporeal in origin, such as carbolic acid and perchloride of mercury.

B. *Immunising substances* intracorporeal in origin, such as the bacteriolysins, the agglutinins, the antitoxins, the opsonins, and probably others as yet undiscovered.

Hitherto we have pinned our faith to chemical antiseptics, and the history of medical therapeutics is replete with failures of the many varieties of chemical antiseptic to control bacterial infections. To-day there are but two left, namely, quinine and mercury, and, strange to say, both of these antiseptics are effectual in diseases which are protozoal in origin, and not bacterial.

In surgery even, the efficacy of antiseptics is being more and more questioned. There is a large and increasing school that practises asepsis; and furthermore, Sir Almroth Wright has recently shown that the application of antiseptics to a healthy wound may predispose to bacterial invasion, because of the fact that the natural bacteriotropic substances of the body fluids are completely neutralised, even by weak solutions of antiseptics.

Since, therefore, chemical antiseptics have proved somewhat disappointing, we naturally turn with renewed hope to the other great class of bacteriotropic substances, namely, the immunising substances.

The best known of these is the antitoxin of diphtheria. Of this I need not speak. The bacteriolysins and the agglutinins have so far not knowingly been exploited to any great extent in the production of artificial immunity. The opsonins, however, demand especial consideration, because of the important position they have already come to occupy in a rational system of therapy.

I shall first of all submit to you a classification of bacterial disease that has emerged from many thousands of estimations of the opsonic power of the blood in almost every variety of microbic infection.

A. *Diseases in which the Bacterial Process is Strictly Localised* (that is to say, in which the focus is shut off from the lymph and blood circulations).—This class includes almost all chronic infections. I will cite a very few as examples: Furunculosis, sycosis, tuberculous adenitis, lupus, probably early pulmonary tuberculosis. etc. In this class the opsonic index of the blood is persistently below normal owing to the absence of immunising stimuli.

B. *Diseases in which the Bacterial Process is but loosely shut off, especially from the Lymph Circulation* —These are more acute in their course, and further more, are continually sending into the circulation immunising stimuli in the form of the bacterial products of the infection. Consequently, the opsonic index tends to fluctuate from high to low. The best example of this class is ordinary fibro-caseous pulmonary tuberculosis.

C. *Diseases in which the Bacterial Infection is in the Blood Stream.*—This class includes amongst others, ordinary septicæmia, Malta fever, enteric fever, and ulcerative endocarditis. It is probable, moreover, that most of the acute infectious fevers are included here. The outstanding clinical characteristic of diseases of this class is that they tend quickly to cure or to death. It is probable that the opsonic index in these diseases is usually below normal. We need not stop to discuss the reason for this.

The above observations acquire especial interest and importance from a therapeutic standpoint, because it would seem that chronicity of a bacterial infection is dependent upon a deficiency of particular bacteriotropic substances, and furthermore that the increase of these substances by a proper inoculation with an appropriate bacterial vaccine will usually determine the eradication of the infection.

The general principles of treating any bacterial invasion after the manner of Sir Almroth Wright and Captain Douglas are briefly:

1. Isolate in pure culture the causative micro-organism.
2. Estimate the opsonic power of the patient's blood to this micro-organism.
3. If the opsonic index be at or below normal, prepare and standardise a vaccine from this micro-organism.
4. Inoculate the patient with this vaccine with appropriate doses and at proper intervals as shown by a systematic estimation of the opsonic content of the patient's blood.

We ought, perhaps, to consider for a moment what supervenes upon the inoculation of a proper dose of a bacterial vaccine. Shortly after inoculation there is a depreciation in the amount of the opsonic content of the blood; this is the negative phase of Wright and Douglas. After a variable period this phase of depreciation passes off, and there is an increase in the amount of opsonins above the original point. This is the positive phase. After a time the blood tends to return to the antecedent condition. These considerations are not academic, but most practical, because they, and they alone, tell us when to reinoculate. The cardinal principle is to reinoculate only when we observe (by examination of the patient's blood) that the positive phase of opsonic power is waning. We must never reinoculate during a negative phase, or we will still further drive down the bacteriotropic power of the patient's blood and do him harm.

Tuberculous glands, as a rule, disappear under treatment with tuberculin. I have had two such cases. In one the glands diminished rapidly: in the other case the progress was slower, but large masses decreased greatly in size, and at the present time, in place of unsightly lumps, they are just palpable. The general experience of those who have treated cases of tuberculous glands, and also tuberculous disease of the genito-urinary system (such as cystitis and epididymitis) is that these conditions are especially amenable to inoculation with tuberculin.

Let us now consider briefly pulmonary tuberculosis. From the opsonic standpoint there are two great classes. In one of these the process is localised and the opsonic power is low: in the other the process is not strictly localised and the opsonic power fluctuates from day to day. In the first class are included most cases of early phthisis, and in the second the moderately advanced or advanced cases. I have treated seven cases in the second and more severe class with tuberculin, and although as a rule symptoms were alleviated, and the condition of the patient improved, still I am sure that nothing substantial was gained by inoculation, nor do I believe that even moderately-advanced pulmonary tuberculosis will ever be controlled or cured by tuberculin.

As concerns the early cases, however, I hold strongly to the opposite opinion. I have treated six of these, and, with one exception, they were poor patients who had to earn their living by hard work and to live in unhealthy surroundings. They all showed marked improvement, as concerns such symptoms as cough, expectoration, and pain. Whether the improvement observed is permanent or not it is too early to say. One patient, however, whom I treated for three months at the Victoria Park Chest Hospital, and who showed marked and rapid improvement, had gained 5lb. in weight and was quite well after the lapse of a year in spite of hard work as a domestic servant. I show the tracing of her opsonic curve, and you will see how excellently she reacted to inoculation. I may also say that the opinion I have expressed here with regard to the efficacy of new tuberculin in the treatment of early pulmonary tuberculosis, provided that the inoculations are given in proper dose and at approximate intervals, as determined by estimations of the opsonic power of the blood—I may say that this opinion is held by the great majority of investigators in England.

May I just add one word about that great class of disease in which the infection is in the blood? I shall refer first to a case of of ulcerative endocarditis. This girl was treated by Captain Douglas, who isolated a streptococcus from the patient's blood and prepared therefrom a vaccine. Previous to inoculation with this vaccine antistreptococcus serum had been given an extended trial without producing any good effect. Inoculation with small doses of the vaccine, however, was followed by a marked rise in the opsonic power of the blood, and *pari passu* with this there was a fall of the temperature and a marked improvement in the clinical condition. The ultimate result was that the patient got quite well.

My friend Staff-Surgeon Reid, of the Royal Naval Hospital, Chatham, has treated 16 cases of Malta fever, and is greatly pleased with his results.—*B.M.A.*

MEAT INSPECTION.

The betterment of the food supply of the public is a subject to which, as our readers are aware, *The Lancet* has ever devoted constant attention; nor, as testified by the existence of the Sale of Food and Drugs Acts and the appointment of public analysts universally throughout the country, have our labours been without marked beneficial results. In recent issues we have called attention to the need for fresh legislation to deal with the latest fraudulent developments in connection with the butter trade; the injury in these is directed more against the interest of the honest trader than against that of the public health, although the latter must not be ignored; in another phase of our food supply, however—namely, in the disposal of diseased animals for food—there is an even greater need for fresh legislative interference, for in this case, although there is equally an injustice done to the honest trader, there is, what is more important, the gravest possible risk to the health of the consumer.

As the law stands it is true that heavy penalties and even imprisonment can be enforced against persons found in possession of diseased meat, if it is proved that the latter is intended for the food of man. The sections of the Public Health Acts which deal with this subject are satisfactory enough so far as concerns the penalties that may be inflicted when a conviction is obtained; their weakness, however, lies in the difficulty that there is in obtaining a conviction and the impunity with which diseased animals may be sold in open markets, slaughtered in obscure slaughterhouses, and disposed of to the unsuspecting public. Those responsible for the protection of the public against bad meat are the sanitary and meat inspectors appointed by local sanitary authorities. That these officers do their duty to the best of their ability, at any rate in the majority of cases, there is little room for doubt, but there is still less room for doubt that in most large towns their efforts are largely unsuccessful. The reasons for this are not far to seek. The inspectors have, roughly, two opportunities for examining meat, the first in the slaughterhouse when the animal is killed, and the second when the carcase, either whole or in joints, is exposed for sale in the butcher's shop; for all practical purposes this second may be ignored, for after the intestinal organs and offal have been taken away from a carcase and the latter has been cut into joints it needs very careful and minute examination, such as it is impracticable to bestow on all the butchers' shops of a large town, to de-

tect disease in meat, except, of course, in its very grossest forms. It is therefore at the slaughterhouse when the animal is killed that the inspector's principal opportunity for seizing and destroying diseased meat occurs. But here is another difficulty. Very few large towns are provided with public slaughterhouses; consequently the slaughtering is done, probably at about the same time of day, in numerous slaughterhouses situated in various parts of the town and often at considerable distances from each other. Now as the number of inspectors in a town is always very limited and their duties are multifarious it is obvious that systematic inspection of all animals killed in these scattered slaughterhouses is quite out of the question, and the few cases in which diseased animals are so discovered is due either purely to chance or to some information privately afforded by the enemy of the butcher. Moreover, the difficulty of detecting dishonest butchers is increased by the fact that diseased animals are usually killed very early in the morning or late at night when there is less likelihood of a visit from the inspector. A procedure which would obviously effect a great improvement in the inspection of meat is the provision of public slaughterhouses in towns and the abolition of all private slaughterhouses, and in this respect the Bill introduced in October in the House of Lords by Lord Donoughmore is distinctly a valuable measure, for it gives to local authorities power, after having provided an efficient public slaughterhouse, to acquire and to close all private slaughterhouses. But even if this Bill becomes law there will still remain abuses which are urgently in need of reform. One of the most scandalous of these is the impunity with which diseased animals are openly sold for food in country markets. It has long been known that in many markets no manner of supervision whatever is exercised over the animals sold; indeed, only recently in the columns of our contemporary, the *Morning Post*, a correspondent quotes numerous instances in which diseased animals, at prices varying from 1s. upwards, have been disposed of without any interference on the part of the local sanitary authority. In some markets it is true proper supervision is exercised, but it is a matter of common knowledge that in many others the very opposite is the case; in these latter, which are usually in the proximity of large towns, the diseased animals are driven or, if too feeble to walk, are carted away to an obscure private slaughterhouse where all traces of disease are removed and the meat is disposed of through unscrupulous traders to the long-suffering public.

The immunity which persons engaged in this class of business enjoy is due to the fact that it is almost impossible to detect disease in meat if it has passed through the hands of a slaughterer skilled in this particular line. A large proportion of the cows which are sold at these markets are obviously wasted and in the last stages of tuberculosis, and it cannot but be concluded that they have been used for the supply of milk up to a point when their owner feared that they would die, and he has then sent them to market in order to realise a few more shillings to add to the illgotten pounds which he has already made by the sale of their tuberculous milk. It is to remedy these flagrant abuses that we suggest that fresh legislation is urgently needed. If meat inspection in this country is to become anything more than a name it must be thoroughly reorganised; the present machinery has been tried and found wanting; it is neither the fewness of numbers nor the lack of will or ability on the part of sanitary inspectors that is at fault. No matter how complete the sanitary staff of a town may be, or how well qualified may be its members, it is impossible for them, in the first place, to inspect properly all the animals killed in that town if there are numerous private slaughterhouses, nor, if these latter are abolished and public slaughterhouses are established, will they be able to exercise any control on meat that has been killed in country slaughterhouses and brought covertly into their district. In Mr. John Burns the Local Government Board is credited with a chief who is determined to make his mark upon the sanitary administration of the country; we therefore venture, with all respect, to appeal to him to introduce legislation to deal with the unsatisfactory state of affairs that first allows tuberculous cows to be used on dairy farms and then, in addition to this iniquity, permits them to be disposed of for the food of man without let or hindrance.—*The Lancet.*

Alleged Cruelty to a Horse at Marlboro'.

Wm. Brooks, carter, in the employ of Mr. E H. Roff, was summoned by Inspector Dee, of the R.S.P.C.A., for having on November 3rd, ill-treated a horse by working it whilst in an unfit state. There was a summons against Mr. Roff for having caused the animal to be worked.—Mr. A. Richard Pain, who appeared for the defence, applied for the cases to be taken separately, which was done, that against the carter being heard first.

Inspector Dee stated that at 12.40 p.m. on Saturday, the 3rd ult., he was on duty at the back of St. Peter's Church, when he saw the defendant in charge of a bay gelding attached to a two-wheel water tank, then standing still, attending the steam roller Witness noticed that the animal was very restless in the shafts, first resting one foot and then the other, in quick succession. The animal seemed to be in pain. He spoke to the defendant and called his attention to the state of the horse. He said "Yes; I know the animal is a bit lame. It walked off very stiff. It has been like this since I have been doing it, three weeks, off and on." Witness caused the animal to be moved, and found it went extremely lame on both fore feet, the lameness showing most on the off foot. Witness examined the animal and found it to be aged, in fair condition, and suffering from navicular disease in both fore feet. Both feet were then very hot and inflamed. The driver then said, "It is not my fault, sir. I simply take the horse out that my master gives me. I don't drive the same horse every day." Witness advised him to take the animal out and take it home. He did so and put the horse in the stable.

Cross-examined: When he examined the horse he made a thorough examination, but did not have the shoes off. There was no suggestion of a corn. Witness had a knowledge of horses. He would not be a bit surprised to hear that the cause of lameness was not what he had stated.

Mr. Pain adverted to the fact that the inspector had not called any veterinary surgeon to support his statement.

The Inspector said he was going to call a veterinary surgeon as regarded the charge against Mr. Roff, which was not at present before the Court.

Mr. Pain objected to the evidence being introduced now, after the case for the prosecution had been closed.

The Mayor told Inspector Dee that he might call the veterinary evidence in the next case.

Mr. Pain said that in a case of this sort one had to fight against a certain amount of sympathy which was felt by the Bench for a dumb animal. There was always in the human breast sympathy with an animal which could not complain itself, but that sympathy ought not to outweigh the merits of any case. Mr. Pain went on to give an outline of the evidence which he intended to call for the defence.

The defendant was sworn and stated that he took the horse out with a water cart to follow the steam roller. It had to walk over stones, some of which were rolled and others not. It was rough walking over the latter.

The horse had been at work about two hours, and then stood 1½ hours by the churchyard wall. He should call that light work. When the horse started out in the morning there was nothing unusual about it. The Inspector passed to and fro, and when he came up he asked witness to move the horse. The latter had got stiff and cold standing about, but moved very well. The lameness passed off after it had walked a little way. The Inspector took the horse's left foot and remarked that there was not much heat, but that he fancied there was a little fever.

Cross-examined: The horse went off stiff when moved. Witness did not say that the horse was always lame, nor that it was a pity the old horse was working on the road, when Mr. Roff had other horses.

Edwin Henry Roff stated that he bought the horse eleven years ago, when it was six years old, and had been working in London. He bought it from a 'bus yard. After standing about the horse used to walk a few yards stiff and then go all right. On the day named he saw the horse start and there was nothing unusual about it.

Cross-examined: He did not move the horse out of the stable. He did not ask witness what was the matter with the horse. He did not say that Mr. Broad said it was suffering from navicular disease thirteen years ago.

Other questions were being put in cross-examination on this point, when the Bench held that the Inspector was travelling rather outside the first case.

Stephen Looker, blacksmith, stated that he knew the horse, and saw it on the 17th of October, when it was shod by witness's man in his presence. Witness did not notice anything unusual about its feet then. On November 3rd he saw it going back to the stable, when it appeared to be going very much as it usually did. He did not take much notice of it.

John Charles Coleman, veterinary surgeon, of Swindon, said that he thoroughly examined the horse on Thursday last, at the request of Mr. Roff. He was not satisfied as to the cause of lameness, and made a thorough examination of the horse's feet. He asked for the smith who usually shod the horse, and the shoes were removed. He searched the feet for corns or any punctured wound, and it was not until he pinched the foot round that he discovered what was the matter with it. Upon pinching each frog the horse was restless, especially the off one, when it reared In witness's opinion the horse was suffering from thrush, which was not easily seen until the shoe was off and the foot pinched. From the evidence he thought the horse's going over the rough stones, with a frog already inflamed from the thrush, caused it to go lame.

Cross-examined: The animal was lame on both feet when he saw it, and it was a long standing complaint. He considered that both feet were rendered lame by the thrush, and that this had been aggravated by its walking over the rough stones.

By the Bench: I should say that the horse had this thrush. Many horses had thrush, and it is not until they became bruised that they become lame. It is possible that this horse had the thrush on the 3rd and went out as usual. Stiffness is lameness. Hundreds of horses are stiff, and yet work, and nothing is said about it. I think this horse went out as usual in the morning and that working on the stones bruised its frog. The horse was no doubt exceedingly lame, and they put the lameness down to a chronic affair instead of to an acute affair.

Mr. Pain: Could a man who is not a veterinary be blamed for this?

Mr. Coleman: Certainly not. In fact I almost omitted seeing it myself. I should never have known the cause of lameness, but for pinching the foot round.

Walter George Green, veterinary surgeon, assisting Mr. W. T. D. Broad, of Marlborough, stated that he examined the horse on the 9th inst., and came to the conclusion that it was suffering from navicular disease. That did not always render a horse unfit, and thousands of horses in London were suffering from it, and yet being worked. He saw the horse on the 16th, and saw it had thrush in both feet. The pressure of rough stones on a frog where there was thrush would cause lameness. It was possible for a horse with thrush to leave the stable apparently sound and become lame through going over loose stones.

Cross-examined: He told Mr. Roff on the 9th that the horse was fit to work on the land and occasionally on the road.

The Bench (after consultation) intimated that they had decided to dismiss the action against Brooks, believing that he was acting entirely under the orders of his master, and that he himself was not blamable in the matter.

On the application of the Inspector Dee, the Bench remitted the costs.

Edwin Henry Roff, contractor, of the London Road, was then charged with having caused the horse to be worked whilst in an unfit state. Mr. A. Richard Pain appeared for the defence.

Inspector Dee stated that at 1 p.m. on November 3rd he saw the defendant at the stables, and spoke to him about the horse. Mr. Roff said, "I am very sorry. It is the best horse I have got in the stable. I gave £4 for it thirteen years ago." They entered the stable, in which the animal was resting its feet against the manger. Witness picked its feet up and pointed the lameness out to defendant. Witness asked the defendant to take the animal out to see it walk, and he did so. The animal went lame. Defendant said, "I saw the horse going out this morning, and I admit he was a bit stiff. He always goes like that. You cannot find any sores about him." Witness said he could not, adding, "In my opinion the animal is suffering from navicular disease of some standing." The defendant said, "Yes; that is what Mr. Broad said years ago, it being the first horse he ever examined in the town." Witness told him that as Mr. Broad was his veterinary surgeon he had better call him. The animal was put back into the stable, while witness and defendant walked together to Mr. Broad's house. Mr. Broad was out. The defendant said, "I shall not work the animal again on the road." Witness then left.

Cross-examined: He had not previously warned the defendant. It was not usual to give a warning. Sometimes he did so. In a case of extreme lameness like this he was bound to report it to the London office. He did not find any sign of thrush. He had not seen the horse before.—Mr. Pain asked the witness whether it was likely that a person would work a lame horse in a public place. Was it not likely that he would keep it out of sight?—Witness: Not always; some people don't care; they go on as long as they can. The witness added that he thought the horse had been lame for some time, and if he had seen the horse before in the same condition he would have stopped it. A gentleman in the town, who had horses of his own, gave him information, and he went to see the horse. Witness had gone to Mr. Roff before to complain about a horse, but failed to see him. He had made no complaint to him about this horse.

Francis H. W. Cundell, veterinary surgeon, of Swindon, stated that on the 9th inst., he examined the horse. He was of opinion that it was lame on both fore feet from long-standing navicular disease, and that it was consequently unfit for work. It was in pain and too lame to work. He did not notice any thrush. He did not believe that injury to the frogs by passing over large stones would, supposing the horse was affected

with thrush, cause lameness similar to that which this horse was suffering from. Further, he was doubtful if it would cause any lameness at all, because thrush was an affection of the insensitive frog, and if it were of such long standing that it affected the sensitive tissues of the feet, it would be so easily noticed by smell and sight that it would be impossible to miss it. In five days after the animal had been stopped and turned out into a wet meadow he would expect it to go better, and especially from the 3rd to the present date it would be much better. In his opinion the animal was totally unfit to work on the 9th, when he examined it, and he told Mr. Roff so.

Cross-examined: He made a thorough examination but did not have the shoes off. He was prepared to support his view against the opinion of as many veterinary surgeons as the defence wished to call. He did not think there was much thrush there. Some horses suffering from navicular disease were fit to work.

By the Bench: I should say this horse would be fit for slight work on the land, in traces; but not for road work, especially in a water cart—it could not have had worse work to do.

Mr. Pain raised the legal point that the evidence had not proved that there was any guilty knowledge on the part of the defendant. He quoted in support of his contention the cases of "Small *v.* Ware," "Elliott *v.* Osborne," and "Greenwood *v.* Backhouse."

At this stage the horse, which had been sent for by direction of the Bench, was brought into the High Street, near the Town Hall, and the magistrates adjourned for the purpose of inspecting it.

The Bench, on their return, gave their decision on the point raised by Mr. Pain, and held that there was sufficient evidence to go on with the case.

The defendant was then sworn, and stated that he bought the horse eleven or twelve years ago. It was then six years old. Witness called Mr. Broad in to examine it. Mr. Broad made a thorough examination of it and said it was suffering from navicular disease, through being in London, and defendant would be able to work the horse as usual. That defendant had done so ever since, continuously in the town. No one had stopped him or interfered with the working of the horse until now. He had never had any complaint whatever as to his horses. The horse had been following the steam roller since the 3rd of October. The steam roller had been working in the most frequented streets. It was a small water cart and the work was light, the horse being the oldest he had. The horse did move stiff after standing, but after a few steps it walked perfectly sound. A lame horse generally "bobs" and if lame on two feet no one but a practical man would detect its being lame. On the morning of the 3rd he saw the horse leave the yard. He did not notice anything more than usual. It went stiff for a few yards and was then all right. He had never had the horse treated in any special way. On the 3rd he did not see the horse after it left the yard until he saw it with Inspector Dee at the stable. Defendant had had experience with horses for a long time. This horse was in good condition and always had been. When a horse was suffering pain it lost flesh a great deal. This horse had not lost flesh. He did not know that the horse had thrush before Mr. Coleman informed him.

Cross-examined: He called in Mr. Broad on the evening of the 3rd, but he did not examine it. He looked at it, but it was dark. He did not remember what Mr. Broad said. He could not say whether or not Mr. Broad advised him not to work the horse any more. He said he knew the horse was lame, but he did not know that it was worse than usual.

Stephen Looker gave similar evidence to that in the other case.

John Charles Coleman also gave evidence, repeating that adduced in the former case. He had seen the horse outside that day and found that the thrush was a great deal worse than when he last saw it, and he was now more positive than ever that the thrush was the principal cause of lameness, as with exercise in navicular disease the lameness very often passed off entirely. The cause of the lameness in this case was inflammation of the sensitive structures lying above the frog, arising from thrush. That would have been aggravated by the horse passing over rough stones.

Cross-examined: The animal was not now fit for work. He could not say how long it would take to cure thrush—anything from a week to six months.

Walter George Green, veterinary surgeon, also gave evidence as to several examinations of the horse.

Cross-examined: He could not say how long the animal had been suffering from thrush. He thought it must have been before the 3rd of November. Between suffering from thrush and navicular disease the horse had had a rough time. When he examined the horse on the 9th he found no inflammation in the foot.

At the close of the case the Bench retired for consultation. On their return the Mayor stated that after having carefully considered the matter they had come to the conclusion that the case had been proved against the defendant. Considering the great expense which the defendant would probably be put to in the matter, they wished to make the fine as low as possible, if the defendant would give them his promise that the horse, which they considered was not fit for work, would no longer be worked, or better still, destroyed. They considered that it was past work. If the defendant would give them that undertaking.

The defendant: Not to work it at all?

The Mayor: Not to work the horse at all any further.

The defendant: I will, sir.

The Mayor: We do not demand absolutely its destruction, but with that promise—that you will never work that horse again—the fine will be £1 and costs.

Inspector Dee applied for a veterinary surgeon's fee to be allowed in this case, and the Bench agreed to do so.

Mr. Pain contended that in fairness the costs should be allowed to the successful party, Brooks, in the other case, and he applied for solicitor's fee and the fees of two veterinary surgeons.

Inspector Dee replied that the other case had been decided and disposed of, and that no question of costs had been raised then.

The Bench, after consultation, decided that the former case could not be re-opened, and the costs would not be allowed.

The hearing lasted nearly three hours.—*Marlborough Times.*

Plymouth's Meat Supply.

Great indignation has been caused in Plymouth by the serious allegation made at a meeting of the Western Counties Veterinary Medical Association, held at Plymouth on Thursday, 22nd ult. At that meeting it was mentioned that several dealers made a living by doing a large traffic in diseased meat, and that a very large number of diseased animals, both living and dead, found their way into the large towns for human consumption, especially into Plymouth, Devonport, and Stonehouse. This indignation is not to be wondered at, for when several persons, who have an intimate knowledge of the whole question of meat inspection, were consulted by a representative of *The Western Daily Mercury*, they showed how groundless was such an accusation. Strange to say, all were of one opinion as to the reason for such utterances, viz., the appointment of veterinary surgeons as meat inspectors.

Dr. Williams, the Medical Officer of Health for Plymouth, pointed out to our representative that he had had the matter in hand for the last fifteen years, and, while believing that a few diseased carcases might find their way into the borough, regarded the substance of the allegation as absolutely incorrect. There was a persevering meat inspector, who examined the meat in Plymouth Market and in the various shops and the people never knew when he was coming.

It was quite wrong to say that a large number of persons made their living by trafficking in diseased meat. So far as was practicable every means of protection was taken. The inspector was an excellent official, who had spent a great part of his life in the trade, and he (Dr. Williams) would rather have such a practical man than a veterinary to inspect food. They could do with another inspector to deal solely with the private shops.

Mr. F. Adams, the Meat Inspector for the Borough of Plymouth, repudiated the statements which had been made. In Plymouth last year 34 tons of meat were condemned, the value being £1045. One-half was diseased through tuberculosis of various kinds, and the remainder from diseases of other kinds. He pointed out that over 100,000 carcases, weighing 8825 tons, passed through the town last year, and about 4,000 tons of this quantity was killed in the borough. He did not believe the allegation, so far as Plymouth was concerned. At any rate he knew nothiug of it. No doubt other authorities would be communicated with, but he would like to see one particular case specified as occurring in Plymouth.

Mr. Adams added that he inspected nearly two hundred shops, six private abattoirs, one public abattoir, and three tripe houses. If he had the slightest suspicion he was on the track of the party concerned in a minute, and, if necessary, a prosecution would follow. It would be as well to know the quantity of meat condemned in Devonport and Stonehouse as well. A great deal of meat came from outside Plymouth, and the carcases were not only inspected, but stamped in blue letters which could not be rubbed out.

In his opinion the idea the Western Counties Veterinary Medical Association had in view was that a meat inspector should be a veterinary surgeon. Mr. Adams intimated that he was a practical butcher himself, and in conclusion quoted the following from Dr. Francis Vacher's "Food Inspectors' Handbook":

> As the only really difficult part of food inspection is meat inspaction, it is well that the man chosen should have a good practical knowledge of meat, but that it is necessary or even desirable that he should be a veterinary surgeon is open to question. . . . . I therefore incline to the belief that a good intelligent butcher will probably make the best food inspector.

The Mercury representative also obtained the views of two of the principal butchers in the town. They both were emphatic in their denials as to the truth of the statements. "Decidedly not; it is impossible" were their first comments, and they went on to explain that there was very little meat coming into the borough of which the meat inspector was not aware. Supposing a public abattoir existed and the trade had everything they could want, then it could not be said that an isolated case might not crop up now and again. When it was definitely known what was diseased meat, the n

DISEASES OF ANIMALS ACTS 1894 TO 1903. SUMMARY OF RETURNS.

Period.	Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy)		Rabies. Cases Confirmed.		Sheep Scab.	Swine Fever	
	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Dogs.	Other	Out-breaks	Out-breaks.	Slaugh-tered *
GT. BRITAIN. Week ended Dec. 1	28	31			20	37			31	33	231
Corresponding week in 1905 ..	9	11			16	24			23	15	110
Corresponding week in 1904 ..	16	19			22	32			14	15	59
Corresponding week in 1903 ..	15	17			22	56			57	28	136
Total for 48 weeks, 1906	861	1215			1016	1918			426	1128	6517
Corresponding period in 1905 ..	888	1208			1128	1929			801	740	3386
Corresponding period in 1904 ..	933	1397			1425	2501			1193	1140	5343
Corresponding period in 1903 ..	696	1043			1362	2344			1486	1379	7302
Board of Agriculture and Fisheries, Dec. 4, 1906.											
IRELAND. Week ended Nov. 24	1	1	..	..	..	..	..	..	11	3	10
Corresponding Week in 1905 ..	..	..	..	..	..	1	..	..	15	1	5
Corresponding Week in 1904 ..	1	4	..	..	..	..	..	..	10	1	1
Corresponding Week in 1903 ..	..	..	..	..	..	..	..	..	30	1	56
Total for 47 weeks, 1906	4	8	..	..	8	16	..	..	213	91	971
Corresponding period in 1905 ..	3	5	..	..	29	100	..	..	277	137	1415
Corresponding period in 1904 ..	4	7	..	..	11	34	..	..	415	299	4068
Corresponding period in 1903 ..	3	10	..	..	3	4	2	..	518	289	3830

Epizootic Lymphangitis: Week ending Jan. 27, 1906, 1 case.

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Nov. 29, 1906.

NOTE.—The figures for the Current Year are approximate only.

* As Diseased or Exposed to Infection

the authorities could take steps to deal with it. There were cattle which were not diseased, yet they were not good cattle to graze; and these were being bought and sent to the big markets. If such cattle were not regarded as suffering from tuberculosis, then no diseased cattle came into Plymouth.

It was wrong to say that there were people doing a big business with diseased cattle in Plymouth. There was no town in England where it was more difficult to smuggle in diseased cattle than Plymouth. The trade would support any scheme for safeguarding the public which was practicable, and if more inspectors were required, then let men be appointed. Let anything be done rather than have such alarming and false reports spread, for they did a great deal of damage not only to the butchers, but to the town. There was no doubt that such statements as that alluded to were made for the purpose of getting veterinary surgeons into the positions of food inspectors.—*The Western Daily Mercury.*

University of Liverpool

Appointment of Deputy Professor of Pathology.

In consequence of the regrettable illness of Professor Sir Rubert Boyce it has been found necessary to make arrangements for carrying on the work of the Chair of Pathology in the University. Accordingly, on the recommendation of the Faculty of Medicine and the Senate, Mr. Ernest E. Glynn, M.A., M.B.Cantab, M.R.C.P.Lond., has been appointed Deputy Professor of Pathology for the ensuing twelve months. Mr. Glynn, who is one of the Assistant Physicians to the Royal Infirmary, has been Assistant Lecturer on Pathology for several years, and, in consequence of Sir Rubert Boyce's numerous engagements in connexion with his university and public work, has often been called upon to carry on the work of the Professorship. He also holds the position of Pathologist to the Royal Infirmary, and has therefore the best opportunity of obtaining specimens for his lectures and demonstrations. The acceptance of the appointment of Deputy Professor will involve the resignation of the position of Assistant Physician.

Appointment of Professor of Comparative Pathology.

At the same meeting of the Council, Dr. H. E. Annett was elected to the newly-established Chair of Comparative Pathology. Professor Annett, who was a student of University College, Liverpool, and of the Royal Infirmary, graduated with honours in Medicine at the Victoria University in 1894. Subsequently he was awarded one of the 1851 Exhibition Scholarships, choosing as the subject of his research The Relation of the Diseases of Animals to those of Man. During his tenure of the scholarship he studied at the Royal Veterinary College, London, and also in Berlin.—*B.M.J.*

Major Craigie, C. B. formerly chief of the Statistical Department of the Board of Agriculture, has been appointed Gilbey Lecturer on the History and Economics of Agriculture in the University at Cambridge for the ensuing three years.

OBITUARY.

THOMAS SIMCOCKS, F.R.C.V.S., Drogheda.
Graduated, Lond: June, 1844.

The deceased gentleman had reached the age of eighty-six, and was said to be the oldest member of the veterinary profession in Ireland.

JOHN ARMSTRONG, F.R.C.V.S., Penrith.
Edin: April, 1885.

Mr. Armstrong died at Penrith, on Saturday, Nov. 24, and was interred at Penrith Cemetery on the 27th. He was only 44 years of age.

CORRESPONDENCE.

THE CAMBRIDGE CRUELTY CASE.

Sir,

Although I think your editorial of Nov. 17th, and Mr. Mayall's lucid letters, should have satisfied Mr. Kirk, it appears not to have done so. Therefore, with your permission, I will just say a word or two in explanation.

So-called "*ringbone*" is an exostosis on either or both the coronet or suffraginis bones, if on the former it is termed "*low*," if on the latter "*high*." When it simply involves the shafts or bodies of those bones it is called "*false*," and when implicating the articulations "*true*." Thus it is evident we can have *true low ringbone* when the pedal joint is affected, and *false low ringbone* when it is limited to the body of the coronet bone. Similarly *true high ringbone* when the pastern joint is implicated, and *false high ringbone* when it is limited to the body of the os suffraginis.

In the Cambridge case I think all witnesses for the prosecution agreed that the joints were *not* implicated, hence there cannot have been a *true* ringbone present; if there was one at all it must have been of the *false* variety.

Mr. Kirk admits he "has yet to learn that an extensive outgrowth of bone occupying the entire front and sides of the most important bone in this connection, viz., the os coronæ, is anything but what is known as a *true ringbone*."

I hope the above classification will explain how this can be, viz., by the extensive outgrowth not implicating the ligaments, synovial membrane, or cartilages of a joint.

Moreover, I would like to remind Mr. Kirk that we may, and do, find an extensive growth of bone around the coronet bone without it even being a ringbone—in the ordinary acceptation of the term—at all. This was actually the case in the os coronæ that was the "bone of contention" in this case. The "extensive growth" round that particular bone was nothing more or less than a collar of bone around the os coronæ that had at some previous date actually *been fractured*. I think Mr. Kirk will admit that we should not call a bony enlargement the result of a fracture a ringbone; at least *after death*, although we must admit we could not differentiate this from any other exostosis *during life*. Whatever a ringbone may be, it is not a collar of bone holding together the fragments of a fractured bone.

Again Mr. Kirk says it was "not clear that the cartilages of the proximal phalangeal articulation were not ulcerated. No one appears to have seen them, and certainly those who saw the dried bones could form no deduction as to this."

Now here, again, I think Mr. Kirk is in error, for I believe he will find, whenever we have the articular cartilages diseased to any extent—in chronic cases as this was—the bones underneath will certainly show changes, even after boiling, sufficient to indicate that such was the case before they were boiled or macerated. At least, if this is not so, perhaps some of those who have studied articular diseases more recently than I have will be good enough to correct me on this point. As far as I know, the cartilage covering the ends of bones is nourished from the adjoining circulation in the bone, and, therefore, some change must take place here, to alter or cut off this nourishing fluid, before necrosis or death of this structure can take place, and as a natural result the bone will sooner or later undego corresponding changes, not necessarily necrosis it is true, but often the opposite—a thickening and hardening of the bone.

—Yours truly,

GEO. A. BANHAM.

Downing Street, Cambridge.

Sir,

I would rather leave the question as to what is and what is not "priggishness" to your readers than accept another of Mr. Kirk's assumptions.

There is an old saying pretty well known among the members of the English Bar which says something about "when you have no case etc." My remark in my letter that "an assumption was not evidence" seems to have greatly perturbed Mr. Kirk. I didn't write anything about an expert opinion not being evidence. If that expert opinion is founded on facts seen, handled, appreciated, in-

terpreted, and exactly expressed I can fancy it being evidence of the very strongest character, but *assumptions sometimes are not facts*, and I believe it was the question of ulceration of the cartilages we were discussing in connection with the assumption, and not that of ringbones.

I do not decry the works of Williams and Möller and in the whole of my life I have never decried them. On the contrary I admire them as works on surgery, but I don't think they ought to be trotted out for the veterinary profession to take their pathology from, and I don't think they ought to be quoted in courts of law when *expert* opinions are needed on questions of pathology.

An expert study of *the whole* of that leg *during life and afrer death* would be stronger evidence than any Mr. Kirk could bring from books. Has Mr. Kirk never heard of Green and Hamilton and who lectured on pathology when he went to college?—Yours truly,

G. Mayall.

CRUELTY CASE AT MARLBOROUGH.

Sir,

Herewith I enclose a newspaper report of a R.S.P.C-A. prosecution at Marlborough.

I particularly desire to call attention to the professional evidence in the case, and to ask if it is wonderful that magistrates will not value professional evidence at its true worth.—Yours faithfully,

J. C. Coleman.

(The report appears on p. 363.)

SCIENCE AND BUSINESS.

Sir,

I would prefer this title to that of "Commercial and professional."

It is a pretty well known fact that science is not always business, and it is equally true that business is frequently not science. But a good deal of science may be displayed in business, although, except in its money making aspect, this is not evident in the quack medicine business.

The purists of the profession would desire us all to live by sticking solely and simply to science. In theory this is admirable and desirable. If all clients appreciated science it would be easy of accomplishment. If all clients were easily led by men of science and learning it would not be hard to arrive. But has science ever taken her right place yet in the counsels of the nation? has the educated man yet perceived her value? has the man in the street much reverence for her?

The general veterinary practitioner knows that his science is frequently questioned and his professional ability doubted. The more ignorant the client, ofttimes the greater his knowledge and the more harrassing the time for the scientific man.

The quack medicine vendor has no scruples about science. He goes in and makes money. Perchance he dies, and "life's little ironies" are accentuated by him leaving half-a-million of money to a scientific institution or a body of scientific men. The quack learned the science of making money. On his death-bed he showed his reverence for science by leaving half his money to her.

It would in the present state of things seem impossible for man to live on science alone. How far then should he study the science of business and finance in order to advance himself and satisfy his science conscience? What does he learn at his alma mater? What is there put on the fore-front of his diploma? Surely not "Thou shalt not compound medicines and sell them." Does he not learn the science of toxicology and therapeutics? Is there not written on his diploma "*the science* and art of *veterinary medicine* and surgery"? Does not "veterinary medicine" include a knowledge of drugs and their uses? Is there no science in the using of drugs? Assuredly there is, but it takes a scientific man to see it. Hence the flourishing of the quack.

It were surely better if the public will buy stock medicine that the man qualified to dispense that medicine should supply it than that drinks of strange odour and deep colour should be scattered broadcast o'er the land.

We are a learned profession it is true, but the best learning cannot be attained without money, and it is recognised, speaking generally, that money cannot be attained by science alone. If science were established and endowed, if halls were erected in her honour, we might all live by worshipping her. Perhaps even then some of us would need independent incomes to augment our salaries.

Here at present science is what the Americans would call "up a gum tree," and a judicious combination of business and science is the only way for the fittest man to survive. The reasonable man will always want a fair share of profit. He may try by law to clip the quack's wings; he may by energy compete with him. His desire for profit ought not on the one hand to be too confined by sticking solely to science, nor on the other hand ought it to be cramped by too tender regard for the quack medicine vendor and his real and would-be clients.

G.M.

MEAT INSPECTION.

Sir,

Very probably the system of licensing and registering all slaughter-houses, and fixing regular hours for slaughter and inspection, will be the first serious attempt at meat inspection in the greater part of this country. Possibly, also, as your correspondent "Verax" seems to think, it will be the *only* one which the present generation will see, as far as the agricultural districts are concerned. But I altogether disagree with "Verax" in his opinion that "there is hardly a veterinary surgeon" incapable of efficiently performing the duties of inspector of meat.

I think there are many hundreds of qualified veterinarians in this country who, at the present time, are no more fit to inspect meat than is the average medical practitioner to take charge of a bacteriological laboratory.

When public health matters, and our own position therein, come up for discussion at any of our professional societies, we invariably hear the complacent assertion that "veterinary surgeons are specially trained and *examined* in meat inspection." So they are at the present moment, but for how long has that been the case?

The retailers of this stock phrase seem to forget that meat inspection was not introduced into the veterinary curriculum until the establishment of the four years course, and that the vast majority of our members have never had any systematic training in the subject at all, and certainly have never passed examinations in it.

Meat inspection really is a special branch of practical pathology, demanding for its proper performance special knowledge, training and experience, which are not yet universally found—or even commonly found—in the holders of veterinary diplomas.

I admit that the ordinary veterinary training forms an excellent stepping-stone from which to reach the expert knowledge required in this particular branch of veterinary science, but it should never be forgotten that meat inspection *is* a speciality, for which the bulk of veterinary surgeons at this moment are quite untrained, and in which no veterinary surgeon whose time is largely occupied with private practice is likely to become very expert.

In these days of examinations in meat inspection and post-graduate courses, with a veterinary diploma of public health looming in the near future, there it little doubt that when they do awaken to the necessity for reform "a sufficient number of members of the profession who have specially studied meat inspection"—I quote from Sir John M'Fadyean—"will be available for the work." But those members of the profession must be specialists, not ordinary practitioners conducting their inspection from "a veterinary establishment" either in town or country.—Yours truly,

"Three Years Graduate,"

Communications and Papers received.—Messrs. W. S. Lamont, G. Mayall, W. Ascott, J. L. Perry, E. Wallis Hoare, A. H. Sowerby, J. R. McCall, and H. Begg.

Report of Vet. Director General, Dept. of Agric. Canada, 1905, *The Western Daily Mercury*, *The Penrith Observer*, *The Mid Ulster Mail*. *The Sussex Daily News*, *South Wales Daily News*.